

# Team Alpha

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# Design Principles

# Design Principles

- Become a Center for Excellence for three specialty care areas:
  - Asthma
  - Sickle Cell Anemia
  - Child Advocacy

# Design Principles

- Improve patient satisfaction to increase retention and volume
- Design space and processes to cater to patient and family demographics
- Implement solutions that result in very low infection rates
- Improve care coordination and continuity

# Problems

# Problems

- Poor hand washing practices lead to higher nosocomial infections
- Inconvenient sink locations and forgetfulness are barriers to proper hand washing behavior
- Patients and visitors have high levels of anxiety, stress, and frustration in hospitals due to lack of transparency of care

# Problems

- Wayfinding is costly for a hospital mostly due to staff time helping patients and visitors locate their destinations
- Adults and children are different and hospitals often do not take into considerations these differences when designing and planning the wayfinding systems
- Environmental stress and anxiety affect how visitors and employees are able to

# Problems

- Waiting times in the ED are often excessive
- Poorly designed ED processes cause longer waiting times



# Evidence & Benchmarks

# Evidence

- Hand washing compliance rates are typically 15-35%
- There are 2 million nosocomial infections per year in the US
- Alcohol-based hand-cleaners at bedside increase hand washing compliance

# Evidence

- As floor plan complexity increases, wayfinding performance decreases.
- Graphic signage produces the greatest rate of travel in all settings, but textual signage is the most effective in reducing wayfinding errors, such as wrong turns and backtracking

# Evidence

- The addition of signage across five settings resulted in:
  - a 13% increase in rate of travel
  - a 50% decrease in wrong turns
  - a 62% decrease in backtracking

# Evidence

- The annual cost of a wayfinding system was calculated to be \$448 per bed per year in 1990 because it occupied 4,500 staff hours which is more than two FTEs.
- Younger children (2nd graders) have substantial difficulties estimating direction when compared to older children (6th graders) and adults.

# Evidence

- Younger children need more attempts compared to older kids and adults to learn a specific route regardless of the existence of landmarks.
- Children orient themselves at a “start” position more often and turn around more frequently than adults.

# Evidence

- Stress can both improve and decrease memory:
- It can improve short-term memory because people are able to process “easy” information faster.
- For things that involve more processing, stress can lower the working memory capacity, thus decreasing memory.

# Evidence

- Grid structure enhances route accuracy but has little effect on memory for the actual place locations or spatial order.
- Landmarks have a small influence on route learning, but help comprehension of place locations.
- Perceptions regarding waiting time, information delivery, and expressive quality predict patient satisfaction, but actual waiting times do not.



# Evidence

- 85% of left-without-being-seen patients identified “more frequent updates on wait time” as a reason they left
- Nearly 50% of the time spent in an inner city hospital ED was spent in the waiting room (4 hours waiting of 8.4 total hours)
- With progressive check-in processes in place, there was a 9.3% reduction in

# Questions

# Questions

- At your hospitals, what incentives are offered for staff who follow proper hand washing procedures?
- Are there any penalties for staff who do not follow proper hand washing procedures?
- How is this accountability measured or enforced?

# Questions

- What does the wayfinding system consist of at your hospital (ie. electronic and paper mapping, external building directories/cues, information desks, interior design layout, location of entrances, etc)?
- Have you noticed patients and visitors experiencing problems due to wayfinding? Do these people seem to have increased

# Questions

- Does your building employ the use of landmarks?
- If so, how have they been made landmarks?
- Is it because:
  - people continually visit them?
  - they are nodes of activity?
  - they have special labels (ie. themes, animals, colors)?

# Questions

- Are there items/signage/wayfinding systems at the “level” of children?
- For example, are all signs and wayfinding devices placed at adult eye-level?
- If so, do the children seem to use these strategically placed systems?

# Questions

- What is the average wait time for your Emergency Department?
- What is the check-in process for your Emergency Department? Is it all-at-once when the patient arrives?

# References



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